TECHNICAL BOOK REVIEW INDEX

Published monthly, except July and August, by Special Libraries Association. Second class postage paid at Pittsburgh, Pennsylvania. Compiled and edited in the Technology Department, Carnegie Library of Pittsburgh, 4400 Forbes Ave., Pittsburgh 13, Pa. Subscriptions, renewals, and orders for back numbers should be sent to Special Libraries Association, 4400 Forbes Ave., Pittsburgh 13, Pa., or 31 East Tenth St., New York 3, N. Y. Price $7.50 a year in the United States; $8 elsewhere.

ANTHONY A. MARTIN, *Editor*

Volume 26 **September, 1960** **No. 7**

THE purpose of the Technical Book Review Index is primarily to identify reviews in current scientific, technical, and trade journals; secondarily, when feasible, to quote from these reviews. In the evaluation of scientific and technical books, reviews constitute the best existing source of information. The service of the Technical Book Review Index is thus in the field of evaluation, rather than in competition with existing publications which announce new and forthcoming books, list books by subjects, or supply bibliographic information. Each quotation immediately follows the name of the journal from which it is taken. Obviously, these brief extracts, detached from the context, must not be accepted as conclusive. Except for the correction of obvious errors, the bibliographic information is as given in the reviews. It is, therefore, in many cases incomplete and in some cases probably inaccurate.

Alexander, P., & Block, R. J., ed.

Laboratory manual of analytical methods of protein chemistry. 3v. v.1. 254p. 1960. Pergamon, New York, $8.50.

Industrial chemist, July 1960, p.363. 1⅝ col.

"A practical text describing methods, often in detail, for the separation and purification of proteins. The references at the end of each section enable the user to avail himself of all the methods not detailed in the text. Most of the procedures are of general application, hence all laboratory workers in organic or biochemistry should have this book handy." *A. McGookin.*

Amyx, James W., and others.

Petroleum reservoir engineering. 2v. v.1. 598p. 1960. McGraw, New York, $17.50.

Journal of petroleum technology, June 1960, p.66. ⅜ col.

"Presents concepts and applications of rock and fluid properties which are fundamental to engineering analyses of petroleum reservoirs. Methods of data evaluation for reservoir engineering purposes are included together with applications of rock and fluid properties for determination of oil or gas in place . . . The volume, a direct outgrowth of a multilithed book used in a series of summer schools in reservoir engineering . . . is arranged so that it can be used either as a text or as a reference work. Primarily, however, it was written to be used as a text in an intermediate four-hour petroleum engineering course, with a course in oilfield development being a prerequisite."

Angus, Harold T.

Physical and engineering properties of cast iron. 528p. 1960. British Cast Iron Research Assoc., Bordesley Hall, Alvechurch, Birmingham, England, $11.

Metallurgia, June 1960, p.281. ½ col.

"A wealth of information on the behaviour and properties of cast iron, and the way in which they are related to its engineering applications . . . Originated in a private collection of data which the author acquired over a wide range of industrial experience and from problems submitted to the Development Department of the British Cast Iron Research Association. Almost every item of information included . . . has been requested at some time or another . . . Will be of great practical value to those who are dealing with day-to-day problems of ironfounding and engineering as well as to research workers, technical colleges and technical reference libraries."

Atabekov, G. I.

Relay protection of high voltage networks; translated from the Russian. 564p. 1960. Pergamon, New York, $14.

Mining electrical & mechanical engineer, June 1960, p.367. 1 col.

"A highly theoretical treatise giving a detailed analysis of the problems arising out of relay protection for high-voltage networks (35 kV to 400 kV are mentioned) under complex conditions of unbalanced faults, and if the book is to be of value the reader must (repeat must) possess considerable mathematical ability . . . A further warning—the reader must have extraordinarily good eyesight because much of the voluminous mathematical treatment is set in type so small that your reviewer had to use a magnifying glass, and to make matters more difficult, some of it is not set up as well as it might be." *R. T. L.*

Auger, Raymond N., & Puerschner, K.

Relay guide. 383p. 1960. Reinhold, New York, $10.

Electrical manufacturing, July 1960, p.152. ⅛ col.

"This reference on electromechanical relays includes data on American-made relays which were available on the market at the time of

compilation. Twenty-three relay types (representing approximately 1000 relays) are assembled in as many chapters, while each chapter contains an alphabetical arrangement by manufacturer. Descriptions of each relay are supplemented by an illustration and specifications. Additional sections . . . deal with arc suppression, establishing contact ratings, oscillographic analysis, various appendices . . . and a bibliography."

Electronic industries, Aug. 1960, p.62, 68. ⅛ col.

"Now it is possible to find the ideal relay for any particular requirement in one convenient source. Where one relay has many variations, the book provides tables or listings of them next to the basic model. A relay which belongs to more than one type is classified into the most specialized chapter in which it fits . . . Presents application data, relay circuits, arc suppression information, relay definitions and terms in addition to relay descriptions. Custom made relays for which no specific descriptions are available are covered in a separate section."

Bayer, Fritz, & **Wagner,** G.
Gasanalyse; Methoden der Arbeitspraxis. Ed.2. 288p. 1960. Enke, Stuttgart, Germany, DM 60.

Analyst, July 1960, p.533. ⅝ p.

"The rewriting and modernisation of this text-book has been incomplete, and much of it is 20 years out of date. There are about five hundred literature references, of which less than one hundred are later than 1941 . . . The British reader will be surprised to find not one single mention of gas analysis by constant-volume apparatus, nor of Gooderham's constant rate of flow apparatus . . . It is curious that a subject as widely practised as gas analysis should be so poorly served by general text-books or monographs . . . There would seem to be a real need for a good monograph on the subject; unfortunately, *'Gasanalyse'* does not fill it." *H. N. Wilson.*

Benson, Cyril S.
Advanced structural design. 329p. 1959. Batsford, London 50s.

Engineer, July 1, 1960, p.25. ⅝ col.

"A practical book which assumes that the reader is familiar with the standard methods of analysis . . . Primarily intended for the use of structural and civil engineers . . . Comprises seventeen worked examples, each being analysed, designed and partially detailed. The calculations are presented in a clear and concise manner, the numerical work being augmented by description wherever necessary . . . Should prove of great help to all those graduate engineers faced with their first design problems in the office and to those who have specialised in one sphere and wish to broaden their outlook."

Benson, Otis O., jr., & **Strughold,** H., ed.
Physics and medicine of the atmosphere and space. 645p. 1960. Wiley, New York, $12.50.

Astronautics, Aug. 1960, p.67. ⅝ col.

"A record of the 'Second International Symposium on Physics and Medicine of the Atmosphere and Space,' held in San Antonio, Tex., Nov. 10-12, 1958 . . . An excellent follow-on, rather than replacement, for the first symposium . . . There was again a successful bringing together of physical scientists and engineers with life scientists, which resulted in the assembly of much pertinent data to manned space flight, and the cross-fertilization of the various scientific disciplines involved therein . . . The book, in addition to its many fine papers, includes numerous references, and should find a welcome place on the astronautics bookshelf." *Eugene B. Konecci.*

Berthelot, Richard Langlois-. See **Langlois-Berthelot,** Richard.

Blakey, J., & Hutton, M.
Engineering mathematics. 603p. 1960. Philosophical Library, New York, $10.

Engineers' digest, July 1960, p.24. ¼ col.

"Based on the well-known and popular text-book 'University Mathematics' by Dr. Blakey and, indeed, retaining the bulk of its contents, this new and excellent version has been arranged in a form more suitable for engineering students of degree standard. As such, the more theoretical chapters of 'University Mathematics' have been removed and have been replaced by chapters on the numerical solution of equations, statistics, relaxation methods, and Laplace transformations. Well written and produced . . . there can be no doubt that this book will amply cover the mathematics needed for a degree in engineering at most universities."

Block, R. J. See **Alexander,** P., & **Block,** R. J., ed.

Bobtelsky, Mordechai.
Heterometry. 229p. 1960. Van Nostrand, Princeton, N. J., $8.25.

Industrial chemist, June 1960, p.307. 1⅛ col.

"While lacking much of the very obvious enthusiasm of the author for heterometry, and completely his experience of its potentialities, the reviewer welcomes this monograph. As an analytical technique it deserves to be better known and appreciated by chemists. It may be that only by the application of the principles of heterometry can certain chemical problems be solved, and this is sufficient justification for the publication of the book. In format, the book is excellent; the presentation is identical to that of the Elsevier journal, *Analytica Chimica Acta,* in which much of the original work was published." *William I. Stephen.*

Journal of the Royal Institute of Chemistry, June 1960, p.214. ⅞ col.

"Well written, though there are some curious views expressed about the techniques of microchemistry and the future of analysis on page 23; some difficulties of translation are in evidence, but these do not mar the text. Finally it must be said that Professor Bobtelsky has performed a very useful task in expounding his technique in this well-produced monograph." *T. S. West.*

Perfumery and essential oil record, July 1960, p.380. 1⅜ col.

"Demonstrates how hitherto unsolved problems can easily be solved by heterometry. Very often a few tenths of a milligram of material is sufficient for a whole investigation. Research workers as well as industrial chemists, working in the fields of analytical and microanalytical chemistry, complex chemistry, study of composition and structure of intermediates, lakes,

complicated organic nitrogen compounds, etc, will find the material presented very interesting and stimulating. On the basis of the information given they will be able to tackle their own problems of heterometry."

Braddick, H. J. J., ed.
Mechanical design of laboratory apparatus. 47p. 1960. Reinhold, New York.

British journal of applied physics, June 1960, p.236. ⅛ col.

"Written in order to help young scientific workers to design and assemble laboratory apparatus. Although some of the ordinary elements of machine design are frequently used in the physical laboratory, they do not usually appear in the education of the physicist and may involve a technical vocabulary unfamiliar to him. Some space, therefore, is devoted to such matters as the influence of design on the ease of construction, and the use and interconnexion of sub-assemblies."

Bradley, R. S. See **Fuchs,** N. A.

Brand, J. C. D., & **Speakman,** J. C.
Molecular structure; the physical approach. 300p. 1960. St. Martins, New York, $8.

Contemporary physics, April 1960, p.334. ⅔ p.

"The writing is excellently clear and the treatments seem reasonably rigorous and sound. The emphasis is on principles rather than on illustrating the applications, although illustrations are given . . . To anybody willing to make the effort, this book is in many ways an excellent introduction. Criticisms in this respect, however, are that references to the original literature are not very numerous, and that the bibliographies at the ends of the chapters are not all as extensive as they should be." *L. E. Sutton.*

Journal of the Royal Institute of Chemistry, July 1960, p.244. 1⅔ col.

"When considering the contents of the book as a whole, the reasons for the choice of contents are not altogether clear, such as why electron spin resonance is omitted when both nuclear magnetic resonance and microwave gaseous spectroscopy are included. There will always be difference of opinion on such points as these, however, and this does not detract from the very clear and coherent way in which the whole book is presented." *D. J. E. Ingram.*

Brinley, Bertrand R.
Rocket manual for amateurs. 382p. 1960. Ballatine, New York, $6.

Astronautics, July 1960, p.72. 2 col.

"Captain Brinley may not have realized that his book will be read by boys and girls 12 to 15 years old who cannot understand the thermodynamics equations given nor the need, which Brinley stresses, for a lot of library research. These children will not even know where to look for information. All they know is that they want to see rockets fly, and that Brinley says that they should. They will ignore the chapters on safety, pound their zinc and sulfur into tubes, go out in the boondocks and proudly fire. And a lot of them will be maimed." *Peter D. Zimmerman.*

Browning, Ethel.
Harmful effects of ionizing radiations. 158p. 1960. Van Nostrand, Princeton, N. J., $3 unbound.

New scientist, June 2, 1960, p.1428. ⅗ col.

"Dr. Ethel Browning, during her long association with industrial medicine, has probably more first-hand acquaintance with the deleterious effects in humans of radioactive isotopes than anyone else in Britain . . . A most valuable factual account of the hazards of radiation and it is certainly not too much to ask that anyone who is responsible for the use or handling of radioactive material should read it. Not only does it provide valuable background information, but it can also be used as a reference work with regard to safety measures." *P. Alexander.*

Bruges, E. A.
Available energy and the second law analysis. 124p. 1959. Butterworth & Co., London, 25s.

Marine engineer and naval architect, June 1960, p.262. ½ col.

"Very well written; actually with a clarity which approaches that of the philosopher. Not that Dr. Bruges is far away from the actual engineering scene; his very practical and up-to-date examples e.g., heat exchanger of a gas-cooled nuclear reactor, prove quite the opposite. It is being made quite clear that the conventional heat balance, as derived from the first law of thermodynamics, is insufficient in judging engineering designs in the above mentioned areas properly. Every designer should possess this book, and apply its principles." *G. Broersma.*

Nuclear power, Aug. 1960, p.114. ⅗ col.

"A well presented book, although not without certain minor faults such as changing from physical to numerical equations without reference to the units used, in Chapter 4. The text is not complete in itself in that, as indeed is stated by the author, it presupposes some knowledge of applied thermodynamics. However, as an addition to basic texts, such as those by Keenan and Schmidt, it should prove to be of value to both students and teachers of applied thermodynamics." *W. Redpath.*

Bube, Richard H.
Photoconductivity of solids. 461p. 1960. Wiley, New York, $14.75.

Design news, July 4, 1960, p.73. ⅔ col.

"The principal purpose . . . is to present a unified picture and interpretation of photoconductivity phenomena, drawing examples from many different kinds of materials, and to show the correlation between photoconductivity and other related photophenomena in insulators and semiconductors. Although the major portion . . . is written from the physical point of view, discussing phenomena and using materials as specific illustrations, a treatment of the chemical preparation and properties of photoconductors has also been included. To understand and use photoconductivity, a brief discussion is included on the basic concepts needed both for the student on the graduate level and by the research worker in allied fields. For the more advanced reader, a detailed treatment of current theoretical understanding of the mechanisms of photoconductivity is included."

Cain, Stanley A., & **de Oliveira Castro,** G. M.
Manual of vegetation analysis. 325p. 1959. Harper, New York, $7.50.

Journal of forestry, Aug. 1960, p.652. 1 col.

"Through an attempt to apply phytosociological concepts and methods, mostly of north temperate regions, to tropical vegetation in Brazil, and the production of a service manual of concepts and methods, this book evolved. About one-half . . . deals specifically with tropical vegetation, especially of the exceedingly complex tropical rain forest, and it is an important contribution to the sparse literature of that important and interesting subject . . . Professional foresters and range men, concerned with the selection and organization of techniques for vegetation study, will find this a most useful book. All botanists will find the detailed treatment of the rain forest of absorbing interest." *Josiah L. Lowe.*

Campbell, R. W.
Tops and gyroscopes. 174p. 1959. Crowell, New York, $3.

School science and mathematics, June 1960, p.502. ½ p.

"Written for the layman interested in a nonmathematical discussion of gyroscope principles . . . Appears to be written so that a high school student, or beginning college student, would find it interesting and informative. The author has included the historical development of the top and gyroscope as well as presented practical applications and elementary theory. Many demonstrations and experiments have been suggested that would be useful in the classroom . . . An excellent addition to the high school or college library." *J. Bryce Lockwood.*

Champeix, R.
Physique et technique des tubes electroniques. v.2. 394p. 1960. Dunod, Paris, $11.84.

Proceedings of the IRE, July 1960, p.1351. ½ col.

"First part . . . deals with the theory of electron tubes. Tube technology is the subject of the second part . . . Will probably provide excellent reading to an intelligent technician who does not have the benefit of a full undergraduate college curriculum in engineering or science. For any college graduate, the introductory chapters are superfluous, and most of the book too elementary. Because of the quantity of material treated in these . . . pages, this book could hardly be more than an introduction to the subject." *R. C. Knechtli.*

Churchill, Ruel V.
Complex variables and applications. Ed.2. 297p. 1960. McGraw, New York, $6.75.

Product engineering, June 20, 1960, p.112, 116. ⅓ col.

"Presents differential and integral calculus of analytic functions, residues, and conformal transformations; and the connections between analytic and harmonic functions. The theory extends beyond an introduction to the subject; therefore it can serve as a substantial background for more advanced theory and for the more unusual applications . . . Also gives a full introduction to some of the important applications in applied mathematics, engineering and physics."

Clark, Thomas H., & **Stearn,** C. W.
Geological evolution of North America. 434p. 1960. Ronald, New York, $7.50.

Earth science, Aug. 1960, p.149. 1 col.

"It is natural to compare this book with 'The Evolution of North America' by the U. S. geologist, Dr. Philip B. King which was published last year . . . Both are regional studies made possible by wide knowledge and experience . . . [Dr. King] begins with the Canadian Shield and ends with the Cordilleras . . . Authors [of this book] devote more space to the Arctic Islands and probably to the Niagara and Great Lakes region while Dr. King ranges farther south. Probably the greatest difference is that Dr. King has omitted fossils almost entirely from the scope of his book while Drs. Clark and Stearn have devoted nearly a third of theirs to the evolution of life as revealed by the study of fossils in relation to the geologic periods."

Clarke, W. E. See **Westwood,** W., & **Mayer,** A.

Corcoran, William H., & **Lacey,** W. N.
Introduction to chemical engineering problems. 185p. 1960. McGraw, New York, $9.50.

Journal of chemical education, July 1960, p.A440. ¼ col.

"A presentation of the physical chemical principles as they apply to a few chemical engineering problems. The text material is well presented and fortified with excellent illustrative problems . . . Although the book is written concisely and clearly it is difficult to see how it will replace some of the present books which are currently used at this level." *John J. McKetta.*

Corliss, William R.
Propulsion systems for space flight. 300p. 1960. McGraw, New York, $10.

Aero/space engineering, Aug. 1960, p.114. ⅛ col.

"A survey and an evaluation of the many 'space engines' developed and proposed for transporting matter about the universe. The bulk of the subject matter has been expanded and brought up to date from a survey course on advanced propulsion concepts which the author presented at the General Electric Co. in 1958. An effort has been made to emphasize the more advanced or 'exotic' types; therefore the focus of interest is chiefly on nuclear and electrical propulsion systems rather than chemical systems."

Product engineering, June 13, 1960, p.85. ⅜ col.

"Makes an assessment of the entire field of thrust devices for use in outer-space exploration . . . Such systems as nuclear rockets, ion drive, photon drive, and antigravity devices are compared in performance capabilities, technical feasibility, and present state of development. Propulsion systems are considered from a practical viewpoint, emphasizing actual contributions, and assigning them roles in the over-all view of space technology . . . Integrates propulsion technology, sets up criteria for comparison, and evaluates the entire field.

Previously this material has been accessible only in widely scattered technical papers and articles published by industry and government."

Darwin, G. E., & Buddery, J. H.
Beryllium. 392p. 1960. Butterworth & Co., London, 70s. (Metallurgy of the rarer metals, no.7.)

Journal of the Royal Aeronautical Society, June 1960, p.367. 1⅛ col.

"Up to date, well written and, as would be expected, well reproduced . . . Scope of the work is wide . . . Covers the historical ground and the whole of the physical and chemical techniques used in producing the metal from the few minerals in which it occurs. The many and various complexities involved in its fabrication are lucidly described. Its physical, chemical and mechanical properties are well discussed. Existing and possible Beryllium alloys are considered and, what is most important at the present time, the outstanding nuclear properties of the metal receive careful survey. Finally, health hazards which could be devastating, were they neglected, receive attention." *P. L. Teed.*

D'Azzo, J. J., & Houpis, C. H.
Control system analysis and synthesis. 580p. 1960. McGraw, New York, $13.50.

Electrical journal, June 24, 1960, p.1798. 1 col.

"This is a book for students: it sets out to be one and achieves its object . . . Based on lectures, and presumably class notes and has a wonderful feature which so many books ostensibly written for students ignore; examples. The worked ones are scattered through the text and the ones for solution are at the end . . . Any book of this sort of topic can be criticised on grounds of inclusion and/or omission, and the present volume is no exception. But it is better than many; it is not given to overelaboration or simplicities nor to plugging at some pet fancy of the authors." *G. S. B.*

Dewberry, Elliot B.
Food poisoning; food-borne infection and intoxication. Ed.4. 411p. 1959. L. Hill, London, 45s.

Chemistry & industry, June 18, 1960, p.715. 1 col.

"The author . . . [has kept abreast of the times] by incorporating the latest information on the subjects covered and by revising the text. Moreover, the scope . . . has been widened by the addition of chapters on food hygiene and inspection, and on canned foods, and additional photographs have been included . . . It is a pity that it still has to be printed upon the kind of paper which reminds one of the days of paper shortage. The photographs too have not been reproduced even as well as in the third edition. If these matters received appropriate attention this worthy book would take on an entirely new look." *L. H. Greenwood-Barton.*

Dickmann, H.
Aus der Geschichte der deutschen Eisen- und Stahlerzeugung. 101p. 1959. Verlag Stahleisen, Düsseldorf, Germany, DM 4.50.

Journal of the Iron and Steel Institute, June 1960, p.249. ⅛ col.

"This interesting booklet, written in a concise and lucid way, describes the historical development of iron and steel manufacture in Germany in its various aspects. The story begins with an iron finger ring of about 150 B.C. discovered in a pagan grave in north-west Germany, and takes the reader up to the present day . . . The value of the booklet is greatly increased by 96 illustrations which are very well selected and reproduced." *H. R. Schubert.*

Din, F., & Cockett, A. H.
Low-temperature techniques. 216p. 1960. Newnes, London, 40s.

Engineering materials and designs, Aug. 1960, p.508. ¼ col.

"Clearly defines some of the practical aspects enabling low temperatures to be obtained, and outlines the problems of measurement, physical properties of materials and other valuable data . . . More emphasis should have been given to the field of refrigerated low temperatures, as great studies have been made here, particularly in the simulation of flight conditions for missiles and high-speed and high-altitude aircraft. This volume, however, may be regarded as a most useful asset to all concerned in this field of activity." *V. A. Austin.*

Journal of the Royal Institute of Chemistry, July 1960, p.245. ⅝ col.

"Describes various low-temperature techniques together with sufficient theory to make the object and method of carrying out the experiments intelligible . . . Written for the student, laboratory worker and technologist. Although original papers are not cited, recommendations are given at the end of each chapter for further reading . . . Remarkably free from errors although there are a few . . . Should be useful to anybody who has occasion to use low-temperature methods provided the reader has a sound knowledge of basic physics." *E. F. G. Herington.*

Dozinel, Charles M.
Modern methods of analysis of copper and its alloys; translated from the French by George R. Andraso. 239p. 1960. Georges Thone, 15 Rue de la Commune, Liege, Belgium, $32.

Analytical chemistry, July 1960, p.56 A. ¼ col.

"Effort has been made . . . to reflect as faithfully as possible the present status of techniques in the chemical control of copper and its alloys. Detailed descriptions of 33 procedures which have established themselves in the industry are given. Determination of the main elements is shown systematically with regard to classical wet methods as well as methods such as potentiometry, polarography, colorimetry, and others . . . An extensive bibliography of the world literature includes more than 750 references."

Journal of the Iron and Steel Institute, June 1960, p.250. ⅛ col.

"The merits of the book, if any, are obscured by the extraordinary 'English' into which it has been translated . . . It is a sort of schoolboy version from the French, not at all Americanized as might be expected, and so obscure

in parts that it would be risky to attempt some of the techniques without reference to the originals . . . Analysts would obtain little help but much joy from this curious and expensive book." *J. G. Cockburn.*

Emeléus, H. J., & **Anderson,** J. S.

Modern aspects of inorganic chemistry. Ed.3. 611p. 1960. Van Nostrand, Princeton, N. J., $7.75.

Journal of the Royal Institute of Chemistry, July 1960, p.243. 1⅛ col.

"Retains all the attractive features that have been responsible for the popularity of earlier editions . . . Printing and general presentation are unchanged, but the text has been rearranged somewhat, and the opportunity has been taken throughout to bring the text up to date. Reference is made frequently to work published as late as 1958. This applies both to the chapters dealing with the chemistry of elements and their compounds and to those on theoretical aspects . . . Will be welcomed enthusiastically by everyone interested in inorganic chemistry." *C. C. Addison.*

Even, Arthur D.

Engineering data processing system design. 282p. 1960. Van Nostrand, Princeton, N. J., $6.50.

Consulting engineer, Aug. 1960, p.212. ⅛ col.

"A written coverage of mechanization possibilities in that area of engineering which deals with drawings, engineering parts lists, and allied documentation . . . Serves as an authoritative guide in converting a manual system to a mechanized one, the most logical improvement before efficient conversion to an electronic data processing system can take place . . . The organization, training, and retraining of existing personnel, system operations, and its control in emphasizing the industrial engineering approach to manufacturing is detailed."

Product engineering, June 6, 1960, p.74. ½ col.

"Describes the methods and equipment involved in the changeover of engineering-record handling from a manual system to a mechanized one . . . Begins with a description of the common engineering documents and the basic concepts of a system for handling them with electronic equipment. Following chapters discuss installation, operation and control of the system and the provisions necessary for expanding it to handle future loads. An actual installation is described, including a set of sample forms taken from a successful system . . . Illustrated with pictures of typical equipment and includes a detailed glossary of terms commonly used in the data-processing and microfilming industry."

Fedot'ev, N. P., & **Grilikhes,** S. Y.

Electropolishing, anodizing and electrolytic pickling of metals; translated from the Russian by A. Behr. 285p. 1960. Draper, Teddington, England, $8.40.

Journal of the Iron and Steel Institute, June 1960, p.250. ⅝ col.

"Divided into 11 chapters, one of which covers electrolytic pickling of metals, six cover various aspects of the electropolishing of ferrous, non-ferrous, light and precious metals, and the effect of electropolishing on their properties while the final four deal with the 'anodizing' of aluminium and its alloys, of magnesium, copper and its alloys, zinc, cadmium, steel, and of silver . . . From the list of references it is obvious that considerable attention has been devoted to the subject by Russian workers and that the art of electropolishing, anodizing, and electrolytic pickling of metals in Russia and in the western world has reached about the same standard." *J. F. Kayser.*

Plating, Aug. 1960, p.958, 973. 1½ col.

"One can find fault with some aspects of the book. Its organization could be improved in several instances . . . The section on anodizing of aluminum is not as complete and thorough as is that in a currently available British book. On the other hand, the presentation of electropolishing is more complete than is elsewhere available in a single source . . . Recommended to anyone concerned with the subjects covered, especially to those concerned with electropolishing. The bibliography of 141 references includes mainly Russian publications." *Vernon A. Lamb.*

Félix, Lucienne.

Modern aspect of mathematics; translated from the French. 195p. 1960. Basic Bks., New York, $5.

Product engineering, June 27, 1960, p.66. 1 col.

"Miss Felix is a French mathematician connected with a revolutionary society known as the Bourbakists . . . Though originally written in French, Miss Felix's translators give us a clear exposition of these new forms of mathematics and the first semi-popular book on the Bourbakist revolution. Not a reference for the library of a practical engineer but a stimulating thought-provoker for those who take their mathematics with a measure of scientific skepticism." *C. J. L.*

Finch, James Kip.

Story of engineering. 528p. 1960. Doubleday, Garden City, N. Y., $1.45 unbound.

Product engineering, July 25, 1960, p.82. ¾ col.

"A book titled, *The Story of Engineering,* cannot hope to cover 'electronics and automation' in 250 words or 'the machine-tool builders' in three pages. By attempting to include too much (like chapters on civil and chemical engineering) Dr Finch has unfortunately included too little. It is also unfortunate that an encyclopedic book of this nature is presented to the reader without benefit of an index." *B. A. L.*

Science, Aug. 19, 1960, p.464. ⅘ col.

"An enormous amount of material has been crammed into this book, and the thread of narrative is sometimes difficult to keep in sight. However, the very neglect of the field, which the author has been working to set aright, is an important reason for this situation. The detailed monographic studies that are essential if anyone is to write a readable, well-knit, comprehensive history of engineering simply do not exist." *Eugene S. Ferguson.*

Fock, V.

Theory of space time and gravitation; translated from the Russian by N. Kem-

mer. 411p. 1959. Pergamon, New York, $15.

Journal of the Acoustical Society of America, July 1960, p.890. ⅛ col.

"In scope it covers both the so-called special theory of relativity as well as the general theory, which Professor Fock considers is not relativity at all but is essentially Einstein's theory of gravitation. He lays great stress on this point, which to some might appear to be largely a matter of terminology, but which he feels is due to a misconception by Einstein himself that the concept of covariance is fundamental in the Einstein theory of gravitation . . . Should stir up renewed interest in some fundamental areas of theoretical physics." *R. B. Lindsay.*

Francis, Gordon.

Ionization phenomena in gases. 280p. 1960. Academic Press, New York, $10.50.

Journal of applied physics, July 1960, p.1306. ⅛ col.

"Intended to be complementary to the several excellent textbooks on ionized gases published in recent years. For this reason the author has avoided repeating accounts of the more well-known discharges . . . and has treated instead those branches of the subject which are closely linked with other branches of physics, and which cannot be studied except by intensive searching through the literature . . . Written mainly for those finishing their degrees or about to begin research, in the hope that they may see a broader picture than is often revealed by specialized and sharply divided curricula."

Fuchs, N. A.

Evaporation and droplet growth in gaseous media; translated from the Russian by J. M. Pratt and edited by R. S. Bradley. 72p. 1959. Pergamon, New York, $5.50.

Chemical products and chemical news, June 1960, p.277. ¼ col.

"The author has provided an excellent review of published work and a very clear exposition of the principles involved . . . Contains a good bibliography and can be recommended to all those working with aerosols or those teaching advanced courses. In view of the method of production which is copied from typescript and the small size of the book it is felt that the price is unreasonably high." *J. R. M.*

Gaydon, Alfred G., & **Wolfhard,** H. G.

Flames; their structure, radiation and temperature. Ed.2, revised. 383p. 1960. Macmillan, New York, $14.

Aero/space engineering, July 1960, p.101. 11 l.

"As in the first edition which appeared in 1953, the aim of the present volume is to give a fairly advanced discussion of a part of combustion that is concerned with stationary flames, with the emphasis on the physical rather than the chemical viewpoint. Chapter 14 is now chiefly concerned with rocket-type fuels (e.g., boron, fluorine and nitrogen compounds). Chapter 15, devoted to recent progress on flame problems, has also been completely rewritten. References to over 200 new papers have been added."

Ginzburg, I. I.

Principles of geochemical prospecting; translated from the Russian by V. P. Sokoloff. 311p. 1960. Pergamon, New York, $11.50. (International series of monographs on earth sciences, v.3.)

Mines magazine, Aug. 1960, p.47. ½ col.

"The most comprehensive volume yet to appear on this subject. Since the early 1930's the Russians have been accumulating an enormous amount of data and have succeeded in assembling it into a well organized treatise on the subject . . . Their sources are mostly drawn from the Russian literature, with only a sprinkling of outside publications. An extensive bibliography, again consisting mainly of Russian sources, most of which are not available to us, is arranged for each chapter . . . I am sure people engaged in exploration will want to own a copy of this book." *Harold Bloom.*

Mining magazine, July 1960, p.30. 1 col.

"A book which exhibits many signs of hasty writing and which is not at all easy to read. Despite the valiant efforts of the translator to clarify obscurities, the rendering into English words is no more lucid than the original and, particularly in the earlier chapters, a good deal of his text bears but a superficial resemblance to the English language. In the reviewer's opinion, if this had been initially a British or American work it would have failed to find a publisher . . . On the first two pages of the bibliography there are 24 mis-prints, a number far in excess of that pardonable in a costly . . . book which purports to be an international monograph." *C. F. Davidson.*

Glickstein, Cyrus.

Basic ultrasonics. 137p. 1960. John F. Rider, New York, $4.60.

Journal of the Acoustical Society of America, Aug. 1960, p.1086. ½ col.

"As a text, the book is suitable for technical institute or vocational school use. No mathematics is required, but a fair knowledge of electronics is needed, especially for the equipment section. The diagrams help not only by livening up the appearance but also by serving as a very effective means of emphasizing the main points of the textual material . . . Could also serve those looking for a good elementary survey of ultrasonic equipment and applications, and as stimulating supplementary reading material for the section on sound in general physics courses." *F. E. White.*

Product engineering, July 4, 1960, p.63. ⅛ col.

"This introduction-type book bridges gap between layman's knowledge and a scientific treatise. First section gives general theory of ultrasonics with special reference to the nature of sound and ultrasound waves. The second section covers basic types of ultrasonic equipment, and an elementary knowledge of electronics on the part of the reader is assumed. The third part describes in detail the most important ultrasonic applications."

Goldberg, Samuel.

Probability; an introduction. 322p. 1960. Prentice-Hall, Englewood Cliffs, N. J., $7.95.

Design news, July 4, 1960, p.68. ⅛ col.

"Deals with the essential mathematics of

probability. Background material for all probability applications is provided. The theory of probability is presented, using the language and notation of sets. Elementary mathematics of sets and additional material on sets are discussed throughout the text. An introduction to random variables and probability distribution functions . . . is given. Finite sample spaces are shown in theory, facilitating a logical treatment of the essentials needed by all who use probability concepts. The author has avoided the use of calculus so that a good background in high school algebra is all that is necessary to understand the text."

Goldsmid, H. J.

Applications of thermoelectricity. 115p. 1960. Wiley, New York, $2.25. (Methuen monograph series.)

Proceedings of the IRE, July 1960, p.1350. ¾ col.

"The book is beautifully written. In fact, its near glibness is apt to give the reader the impression that he has heard the last (and only) word on the subject . . . The experienced worker will find little new in this book. Even for the beginner, extensions to the treatment given will be difficult to find in the references listed at the end of the chapters; only a very few references are given to the later work on transport phenomena. However, these objections are minor and do not detract from the achievement of the aims . . . For an introduction to the field, or for a working knowledge of thermoelectricity, this book is highly recommended." *F. E. Jaumont, jr.*

Gould, Edwin S.

Mechanism and structure in organic chemistry. 790p. 1959. Holt, New York, $12.50.

Journal of chemical education, July 1960, p.379. 1 col.

"Apparently designed primarily for use in a first year graduate course . . . Well organized and covers a wide range of topics, many of them with admirable thoroughness. Unfortunately, the treatment of a number of concepts and reaction mechanisms suffers from a lack of rigor. Questionable assumptions are sometimes made and occasionally there is an arbitrary or tacit dismissal of factors potentially as important as those used in explanation . . . Such shortcomings . . . detract from its usefulness as a text for a first year graduate course." *W. M. Schubert.*

Journal of the American Chemical Society, Aug. 5, 1960, p.4119. ⅘ col.

"There are many differences between this text and all others in the field of theoretical organic. It is quite clear that the author has concentrated his efforts on producing a book which will be both comprehensive and easily consumed by students at an intermediate level. I feel that both of these objectives have been accomplished to an impressive extent. As would be expected, achievement of such aims has cost something in rigor and penetrating analysis. On the other hand, Gould has kept his discussions basically sound which is more than can be said of any other author who has set out to present physical organic to the man in the street." *George S. Hammond.*

Green, H. See **Westwood,** W., & **Mayer,** A.

Gregory, Robert H., & **Van Horn,** R. L.

Automatic data-processing systems; principles and procedures. 720p. Wadsworth Pub. Co., Inc., San Francisco, $11.65.

Control engineering, July 1960, p.186, 188, 190. 2 col.

"The original version . . . was produced under an Army Ordnance Corps contract to be used as a text in its automatic data processing systems career program. While the book is admirably suited to be a text, it will be of interest to management personnel, system analysts, and others concerned with the planning, development, and operation of data processing systems. As the authors suggest, the book may be studied in several ways, according to the nature of the reader's interest. It is conveniently organized for this purpose. Each chapter contains summary and problem sections; and the references and supplemental reading sections following each chapter describe significant material." *James Gibbons.*

Haantjes, J., & **Carter,** H.

Classification of electron tubes. 100p. 1960. Macmillan, New York, $3.50.

Electronic technician, Aug. 1960, p.58. ½ col.

"An unusually colorful pictorial-text presentation describes the basic operating principles and applications of a multitude of different type electron tubes . . . Information contained in the book can prove helpful to the student, as well as the advanced technician and engineer."

Missiles and rockets, July 25, 1960, p.8. 12 l.

"A beautifully illustrated and well written book of especial interest to the student and 'layman' who needs a general understanding of the types and functions of electron tubes. Cutaway color views and brief descriptions explain the operation and applications of all major types. Basics of electron theory are also simply presented. A glossary of 'odes' and 'trons' defines common terms used in the designation of tubes and their components."

Hanahan, Donald J.

Lipide chemistry. 330p. 1960. Wiley, New York, $10.

Chemical & engineering news, Aug. 15, 1960, p.68. 1⅝ col.

"A serious flaw is the complete lack of discussion about the chemistry of the carotenoids and the fat-soluble vitamin esters . . . Highly recommended as a useful and up-to-date reference text for the specialist interested in lipide chemistry . . . Can also serve as a suitable volume for a graduate course in lipide biochemistry." *Hal B. White, jr.*

Chemical products and chemical news, June 1960, p.277. ⅝ col.

"An important and timely book that should be of great interest and value to the biochemist and research worker in the pharmaceutical industry. With its companion volume on Lipide Metabolism (to be issued shortly) it is designed to provide a complete review of the advanced chemistry, principles, and concepts of lipides, and should find a welcome place on many working library shelves." *S. O.*

Chemistry & industry, July 2, 1960, p.866. 1 col.

"As an authoritative account of present knowledge in a complex and still rapidly developing subject, it is probably unique and should be read by all teachers of biochemistry and their Honours students, as well as by research workers in the field of lipid chemistry and biochemistry. The production and printing are of the highest order, there are very few misprints, and a short but useful index is provided." *C. Long.*

Journal of the American Oil Chemists' Society, June 1960, p.31. ⅔ col.

"The contents . . . do not seem to warrant such a broad title. The fields of phospholipides and lipoproteins are well summarized and receive major emphasis. Other types of lipides receive less emphasis. The subject of fatty acids, which is elementary to the understanding of many classes of lipides, does not constitute its own chapter but is to be found as a small part of the chapter on phosphoglycerides. Such lipides as steroids, waxes, fat-soluble vitamins, and hydrocarbons are not discussed/ . . . Will be useful to lipide chemists in research as well as teaching for the subject matter is documented with pertinent references which include recent publications . . . Will be valuable particularly as a reference on phospholipides and lipoproteins." *Ralph T. Holman.*

Harris, Lawson P.

Hydromagnetic channel flows. 90p. 1960. Wiley, New York, $2.75.

Aero/space engineering, June 1960, p.102. ⅛ col.

"This monograph, which presents analyses for three flows of viscous, incompressible, electrically conducting fluids in high-aspect-ratio rectangular channels subjected to transverse magnetic fields, considers turbulent flows in the presence of a d.c. magnetic field and both laminar and turbulent conditions in induction-driven flows. The major purposes of the analyses are the development of an intuitive picture of the internal structure of a turbulent hydromagnetic flow and of calculation techniques for the estimation of the power division in these flows."

Harrison, Thomas Randolph.

Radiation pyrometry and its underlying principles of radiant-heat transfer. 234p. 1960. Wiley, New York, $12.

Design news, June 20, 1960, p.125. ⅛ col.

"The first of three sections . . . is a concise and rigorous presentation of the underlying theory. Section two discusses types of pyrometers and their operation. The final section is a compilation of reference data . . . Not light reading, nor is it intended to be . . . Designed for the engineer or physicist and is sufficient to give definite answers to problems that may be encountered in industrial pyrometry. For those who will demand even greater theoretical detail, the appendix provides a ready reference."

Product engineering, July 18, 1960, p.101. ¼ col.

"Analyzes and solves many technical questions concerning use of radiation pyrometers in industry, giving both theoretical and practical principles of radiation pyrometry. First three chapters have unified discussion of laws of emission, absorption, reflection, and transmission of thermal radiation, applicable to the field of radiant-heat transfer as well as radiation pyrometry. The remaining chapters include important descriptions and mathematical analyses of physical and operating characteristics of radiation pyrometers."

Hartshorne, N. H., & **Stuart,** A.

Crystals and the polarizing microscope; a handbook for chemists and others. Ed.3. 557p. 1960. St. Martins, New York, $17.50.

Analytical chemistry, Aug. 1960, p.84 A. ½ col.

"Designed to meet the need for a more advanced treatment, while not discouraging the beginner. This new edition serves to bring the text up to date with regard to recent developments in the field . . . In over-all content the text, as in earlier editions, yields a comprehensive and practical outlook on its subject matter. There is first a discussion of the crystalline state, followed by discussions on stereographic projection, and the morphology and optical properties of crystals. In addition to coverage of the polarizing microscope and the general conditions of its use, the book deals with special methods and gives various applications in its use."

Science progress, July 1960, p.575. ⅔ p.

"The present edition is . . . very much enlarged (84 more pages and 27 more figures). The amount of new material is indeed greater even than these numbers would imply, for the authors have omitted some of the older methods not now used with modern instruments and have included, along with a description of such instruments, a section on the mechanism of crystal growth, a whole chapter on rotation apparatus and the universal stage, descriptions of hot and cold stages, and a good deal more about quasi-crystalline materials." *Kathleen Lonsdale.*

Hitchcock, A.

Nuclear reactor stability. 61p. 1960. Temple Press, London, 12s. 6d. (Nuclear engineering monograph, no.11.)

Engineer, July 15, 1960, p.105. ⅔ col.

"The treatment of the subject is mainly mathematical and the author is to be commended on the care with which he has tried to keep the notation consistent throughout the book and, where possible, consistent with other volumes in the same series . . . Should appeal strongly to students, research assistants and engineers, who seek to acquire a broad understanding of a subject outside their immediate field of study, and are not interested in the depth of treatment given in specialised textbooks or papers."

Nuclear engineering, June 1960, p.282. ½ col.

"Opens with the consideration of the dynamics of power reactors; the various coefficients of reactivity and the effect which changes in temperature, xenon concentration, and (in boiling reactors) voidage, will have, in stabilizing or destabilizing, and the order of their time scales. Chapter 2 is devoted to the stability of dynamic systems . . . Chapters 3, 4 and 5 deal in detail with the instabilities due to temperature, xenon, and voidage, respectively, while the final chapter is devoted to a brief introduction to the principles of control . . . There is a short bibliography." *N. E. T. S.*

Hutter, Rudolf G. E.

Beam and wave electronics in microwave tubes. 378p. 1960. Van Nostrand, Princeton, N. J., $9.75.

Contemporary physics, April 1960, p.331. ¼ p.

"The author . . . notes that the book was written partly as a textbook for *schools*; the mathematical analysis begins with Maxwell's equations and is therefore more appropriate to university and technical college courses in Britain . . . Gives a good mathematical account of its subject matter and as such is well recommended to the serious student. It is not suitable for one who seeks to dip and skip." *K. J. Standley.*

Electrical design news, June 1960, p.66. ¼ col.

"Analyzes the basic principles of a number of microwave devices, from klystrons and magnetrons to traveling wave tubes. The author points up the similarities and differences between the various kinds of tubes by using the unifying principles contained in the coupled-mode theory, space-charge wave theory and energy exchange. Certain classes of microwave tubes are described and 4 chapters are devoted to microwave circuitry. Beams in gaps and drift regions are also discussed as a background for 2 cavity klystrons, velocity jump tubes, electron wave tubes and resistance-wall amplifiers."

Proceedings of the IRE, July 1960, p.1349. ¾ col.

"Intended as a college textbook and as a theoretical book for workers new to the microwave tube field . . . Does not purport to be useful in the design of microwave tubes other than to provide fundamental understanding of the devices. As a textbook, it gathers most of the important small signal analyses into one place and presents them in a unified fashion . . . Differs from the book 'Space-Charge Waves,' by Beck, in that it gives only the basic small signal analyses but in sufficient detail to be easily followed by the student. The two books would be good complements for a course on microwave tubes." *J. W. Sedin.*

Ipsen, D. C.

Units, dimensions, and dimensionless numbers. 232p. 1960. McGraw, New York, $6.50.

Product engineering, July 25, 1960, p.82. ½ col.

"Addressed to those engineers who wish to increase the power of their familiar mathematical tools by a thorough understanding of the sense behind units and dimensions. Not a compendium of tables listing standard units and conversions factors . . . this book approaches the topic from the point of view that theory, rather than technique, is the basis for solving practical problems. It compares the rationale behind alternative units of mechanics (fps, cgs and mks systems) and discusses in detail the units of thermodynamics and electricity. This fundamental background in the first chapters prepares the reader for the practical techniques presented in the concluding chapters."

Jackson, Albert Smith.

Analog computation. 644p. 1960. McGraw, New York, $13.50.

Design news, June 20, 1960, p.122. ¾ col.

"A comprehensive treatment of analog computers and associated mathematics that should prove an excellent college textbook for introductory analog computer courses. The material is thorough and well presented, with a logical development of concepts and complexities. Only in the chapter on scaling does this book share the shortcomings of earlier books dealing with the same subject . . . Experienced computer operators and computer designers will find the book of little utility, and will deplore the omission of any discussion of advanced analog techniques . . . Despite this, the book fills a real need for an accurate, well-written analog computer textbook."

Jerger, Joseph J.

Systems preliminary design. 625p. 1960. Van Nostrand, Princeton, N. J., $14.75. (Principles of guided missile design.)

Product engineering, July 4, 1960, p.63. ⅜ col.

"This is the unifying volume . . . of the 'Principles of Guided Missile Design' series and covers, at length, the interrelationships that exist in preliminary systems design. Much useful data from important branches of engineering and science involved in missile design is [sic] summarized in convenient working form. A systematic mathematical approach to the problem of preliminary design of systems is introduced and its use illustrated via application to the preliminary design of a homing surface-to-air missile. All variables are expressed in mathematical form to obtain a solution to the resulting equations. This procedure leads to a solution of the problem with a significant savings of time, and presents a clearer perspective of the problem."

Jones, James B., & **Hawkins,** G. A.

Engineering thermodynamics. 724p. 1960. Wiley, New York, $8.50.

Design news, June 20, 1960, p.123. ¼ col.

"An introductory classical thermodynamics textbook. In addition to physical properties and the first two laws of thermodynamics, chapters are included on chemical and mechanical engineering applications. The final chapter is devoted to heat transfer . . . Explanations are exhaustive—particularly in the early chapters. This, coupled with an extensive use of sample problems and a long problem list, would make the text more suitable than most for independent study. As in any thermodynamics books, a working knowledge of calculus is necessary for mastery."

Product engineering, July 4, 1960, p.63. ⅛ col.

"For use in undergraduate engineering courses in thermodynamics to help students to understand the first and second laws of thermodynamics, and develop some competence in applying these principles to engineering systems. There are abundant explanations for various points that are known to be stumbling blocks for students. The amount of explanation is decreased as the book progresses and the reader gains familiarity with the subject."

Judge, Arthur W.

Car maintenance and repair. Ed.5, revised. 464p. 1960. Chapman & H., London, 25s.

Mechanical world, July 1960, p.308. ⅔ col.

"Contains a considerable amount of new material and new illustrations . . . Particularly meant for the owner-driver and in an introductory chapter the author outlines the work which can be satisfactorily undertaken by the amateur and gives suggestions for furnishing a small garage. The remaining chapters deal with various items of maintenance and repair from lubrication to cleaning upholstery and there are useful final chapters on storage and on diagnosing engine troubles easily. Nearly 350 illustrations complement a text which is both thorough and reliable."

Kaiser, R.

Gas-Chromatographie; Theorie, Apparaturen, Anwendung. 223p. 1960. Akademische Verlagsgesellschaft, Leipzig, Germany, DM 32.

Analytical chemistry, July 1960, p.52 A. ⅓ col.

"Designed, not only for the analyst, but also for the synthetic chemist, the routine technician, and instrumentation personnel. The first section gives a simple description of gas chromatography theory. Section 2 is devoted to chromatographic apparatus . . . Section 3 covers qualitative and quantitative applications . . . Finally, in section 4, examples of separation problems are listed in tabular form, and characteristic pertinent values of several important compounds are brought together . . . Contains about 125 photographs and diagrams. Extensive reference lists are included."

Kaye, Joseph, & **Welsh**, J. A., ed.

Direct conversion of heat to electricity. 377p. 1960. Wiley, New York, $8.75.

Electrical South, June 1960, p.134. ⅓ col.

"A new development in the art of producing electricity has dawned. A box with no moving parts, which converts thermal energy directly into electrical energy has been devised. Because the field is so new, however, no trained personnel exist, so engineering talent along this line is unavailable; and until now no concentrated source of reference material existed to train such workers. This volume is an edited collection of papers by the principal contributors of the new technique. Fundamental discussions in the thermocouple, the vacuum tube and the gaseous tube, separating the positive and negative charges in a gas, and the separation of positive and negative charges during a chemical reaction are studied in detail."

Product engineering, July 11, 1960, p.110. ⅔ col.

"This volume—a pioneer effort—is an edited assortment of technical papers written originally for an MIT summer meeting by principal persons in the new technology of direct conversion . . . Includes fundamental discussions in thermoelectric-energy conversion . . . thermionic-energy conversion . . . magnetohydrodynamic conversion . . . and fuel cells . . . The contributors offer considerations of the practical applications and problems associated with each type of conversion scheme."

Kent, James R. F.

Differential and integral calculus. 511p. 1960. Houghton, Boston, $6.75.

American scientist, June 1960, p.168 A. ⅔ col.

"While the range of material . . . is typical of that covered in most texts with similar titles, the treatment is somewhat different. Instead of being written in terse and technical style, it is intentionally phrased in language that hopefully can be understood by a freshman or sophomore in college. More explanatory discussions appear than often is the case in mathematical works . . . Intended for the general student and is not aimed at any particular group such as engineers or physicists." *W. J. Cunningham.*

Kopal, Zdenek.

Figures on equilibrium of celestial bodies; with emphasis on problems of motion of artificial satellites. 135p. 1960. Univ. of Wisconsin Press, Madison, Wis., $3.

Aero/space engineering, Aug. 1960, p.114. ⅙ col.

"The subject of this work is the investigation of the figures of equilibrium of self-gravitating compressible fluids, and of the attraction exerted by them at any external point . . . Aim is to provide a coherent account of the present state of Clairaut's theory of the equilibrium of distorted self-gravitating fluids, complete up to and including the terms of second order."

Nature, June 4, 1960, p.747. ¾ col.

"This important monograph is an exposition of the hydrostatic theory of self-gravitating fluid masses subjected to the distorting effects of rotation and tidal attraction . . . It cannot be pretended that this book is easy to read, though this is due partly to the difficulty of the theory. When the author has the chance to relax from the rigours of mathematics, as in the introductory paragraphs of each chapter, his writing is lucid and lively." *D. G. King-Hele.*

Lance, G. N.

Numerical methods for high-speed computers. 174p. 1960. Iliffe, London, 42s.

Engineers' digest, July 1960, p.24. ⅔ col.

"Presenting a thoroughly practical approach to the subject, this well-written and useful book includes mathematical formulæ and methods which are general in the sense that they are applicable to most modern computers and are therefore of value to all programmers, irrespective of the type of machine available. Important considerations, such as the degree of accuracy, the amount of storage space required, and the time taken to achieve the result, are also given, together with the various methods of evaluating functions, the solution of problems which can be posed in matrix form, as ordinary differential equations or as partial differential equations, and miscellaneous methods of solving equations."

Langlois-Berthelot, Richard.

Transformers and generators for power systems; translated from the French and revised in collaboration with H. M. Clarke. 541p. 1960. Philosophical Library, New York, $12.

Electrical journal, July 8, 1960, p.106. ⅔ col.

"Consists of two distinctly separate sections, 'The Transformer' and 'The Synchronous Machine.' In both sections the author has treated the subject in an informative manner rather than committing himself to difficult and complicated mathematical operations. Thus the work can be read by the less mathematically versed while the eager student is referred to the extensive bibliography . . . On the whole the work . . . can give much useful information to the student and to the practising engineer and can be well recommended for reference." *E. B.*

Lement, Bernard S.

Distortion in tool steels. 173p. American Society for Metals, Cleveland, $10.

Machinery (New York), July 1960, p.247. ¾ col.

"Dr. Lement's new book covers such aspects of tool-steel distortion as: its nature, measurement, and testing; quantitative prediction; control; relation to specific heat-treating operations; and occurrence on aging. He stresses the selection of tool steels offering the most desirable size and shape stability for specific applications. He has included data on changes in shape and size of tool-steel parts of various chemical analyses and designs. The metallurgical principles necessary for both qualitative and quantitative understanding of the subject are explained and discussed. The author does a good job of highlighting the practical aspects of this highly technical subject, keeping mathematical analysis needed for effective presentation to the minimum."

Mandel, Siegfried, ed.

Writing in industry. 121p. 1959. Polytechnic Press, Polytechnic Institute of Brooklyn, New York, $2.75.

Product engineering, June 13, 1960, p.85. ¾ col.

"These are selected papers from the proceedings of the conference on Writing and Publication in Industry, sponsored by the Polytechnic Institute of Brooklyn, 1959. The articles were developed independently by authors in science, engineering, personnel and public relations, science reporting and graphic art. It is remarkable that with such diverse backgrounds the authors have come to basically the same conclusion, namely that the responsibility for improving written communication rests with individuals who, by virtue of doing a specialized task, know most about it . . . [The engineer] must improve his knowledge of techniques in technical writing."

Mantell, Charles Letnam.

Electrochemical engineering. Ed.4. 680p. 1960. McGraw, New York, $16.50.

Chemical products and chemical news, June 1960, p.277. ½ col.

"The present volume is to be regarded as the fourth edition of . . . Industrial Electrochemistry, which has now been retitled and very largely rewritten so as to reflect the large expansion that has taken place in the electrochemical and electro-process industries since 1950. The aim . . . has been to emphasise industrial processes throughout but enough fundamental theory has been provided to serve as a background for industrial practice. A considerable amount of technical and operating data which have been gathered in the practical field is provided." *R. E.*

Margen, P. H.

Nuclear reactor optimization. 81p. 1960. Temple Press, London, 12s. 6d. net.

Chemical & process engineering, June 1960, p.266. ⅗ col.

"This little volume shows the imprint of the master; it is lucid, well thought out and concise without being obscure. The author's theme is based on the concept that in any one type of reactor there are more than 10 independent variables which can be changed without adversely affecting safety or power output. Obviously, only one combination can give the best results . . . By following the author's scheme, a designer and a physicist could achieve the optimum concept in a fairly short time, without the use of a computer . . . This book is both helpful and stimulating." *F. R. Paulsen.*

Marter, Donald H.

Thermodynamics and the heat engine. 811p. 1960. Thames, London, 63s.

New scientist, July 14, 1960, p.166. ⅓ col.

"This book, with its combination of elementary thermodynamics and descriptive matter relating to heat engines, is reminiscent of the textbooks produced in the pre-war years. Yet it fully justifies its appearance. In the introductory thermodynamics and in their application to heat engines, the author has been careful to give definitions and treatment which are in keeping with the modern trend of thought in this subject. In so doing he has avoided much that was unsatisfactory in those earlier texts and has provided a sound basis for further study . . . Recommended to any engineering student beginning a course in heat engines." *A. M. Laird.*

Mason, Samuel J., & **Zimmerman,** H. J.

Electronic circuits, signals, and systems. 616p. 1960. Wiley, New York, $12.50.

Aero/space engineering, July 1960, p.100. ⅛ col.

"Companion volume to *Electronic Circuit Theory,* by Zimmerman and Mason, published in 1959 . . . Presents methods suitable for handling more general circuits, with more general signals applied. These methods form an introduction to system theory. More specifically Chapters 2-5 are concerned with matrix, topological, and signal-flow-graph methods of circuit analysis. Chapter 6 introduces Fourier theory . . . Chapter 7 uses amplifier circuits to illustrate the transmission of signals through linear systems . . . Chapter 8 applies the foregoing material to nonlinear and time-varying linear systems."

Electrical manufacturing, June 1960, p.188, 193. ¼ col.

"Whereas this book has the general format of a textbook (and is being used as one), it bears witness to the recent revision of the Electrical Engineering course at M.I.T., which gives priority to basic principles and methods of analysis rather than to a presentation of current theory. As such, it will find a permanently useful place in the library of the design engineer." *A. M. H.*

Moore, Mark Brown.

Theory and application of mechanical

engineering measurements. 296p. 1960. Van Nostrand, Princeton, N. J., $6.75.

Marine engineer and naval architect, July 1960, p.300. 1⅛ col.

"Throughout almost all of the book, the author shows himself a great believer in actual measurements for the mechanical engineer. Mathematics are a secondary matter for him. This approach to measurement technique shows a first-class experimenter, who is also a mechanical engineer used to making things which must work . . . If one is looking for practical answers to laboratory problems, then this is the book to consult. Professor Moore seems to be the man to send for if one is stuck with a measurement problem." *G. B.*

Moran, P. A. P.

Theory of storage. 111p. 1959. Methuen, London, 13s. 6d. (Methuen monographs on applied probability and statistics)

British journal of applied physics, June 1960, p.241. ⅔ col.

"The first book to appear in the new Methuen series . . . A concise account is given of recent work, by the author and others, on a class of problem in which the input or output of a storage system in a random process and the corresponding output or input is determined by a rule . . . Not easy to read, due mainly to the large amount of mathematical symbols which interrupts the continuity of the text . . . If these monographs are intended for a wide audience . . . it would be desirable for the mathematics to be separated more clearly from the main text." *A. Fonda.*

Narcus, Harold.

Metallizing of plastics. 208p. 1960. Reinhold, New York, $5.50.

Modern plastics. July 1960, p.160. ¼ col.

"Covering all the known methods used in metallizing plastics, this book deals with actual production procedures, formulations, and techniques. Included are electrodeposition (plating), vacuum metallizing, cathode sputtering, silver spray, and other miscellaneous methods. The physical characteristics of the metallized coating and test methods are also discussed . . . Aside from decorative metallizers, engineers interested in putting conductive coatings on plastic surfaces will also find useful, practical information." *G. R. S.*

Plating, Aug. 1960, p.958. 1⅛ col.

"Unusual for a book of this type, the author 'tells all,' sparing no details, and offering all sorts of practical advice and tricks of the trade. By the time he has laid the book down, the beginner ought to understand, 'what it's all about,' and develop rather quickly practical skills in the art . . . In addition to covering about a dozen metallizing methods, the book discusses an important, but often neglected subject: formulas for electroplating solutions used after application of the initial metallized coating . . . In the reviewer's opinion, this book is destined to be for the metallized plastics field what Blum and Hogaboom has been through the years for the electroplating field." *Edward B. Saubestre.*

Product engineering, July 18, 1960, p.101. ⅛ col.

"Presents details for carrying out every commercial metalizing process for plastics or other nonconductors. These processes include the copper-film process, the deposition of 'electroless' nickel coating, a review of the new molded conductive plastics, 'gas' plating, the deposition of thick evaporated films and many, many others. The author includes numerous illustrations showing the latest equipment being used in the newer processes, and recent advances in the field receive special attention."

Niedzwiedzki, Antoni.

Manual of machinability and tool evaluation. 107p. Huebner, Cleveland, $6 unbound.

Machine and tool blue book, Aug. 1960, p.176. ⅔ p.

"Bridges the gap between theory and practice, and between European and American concepts of machining with carbides and high speed steel tools. The ideas put forth by many technical groups both here and abroad have been absorbed, evaluated, and analyzed by the author, and have been combined with the results of his own experiments, calculations, and observations . . . The seven chapters cover tool life formulas, tool life criterion, chip load and workpiece hardness, tool geometry, test records, tool inspection, machinability classification, and machine selection."

Oettel, Wolfgang O.

Grundlagen der Metallmikroskopie. 216p. 1959. Akademische Verlagsgesellschaft, Leipzig, Germany, DM 27.

Journal of the Institute of Metals, June 1960, *metallurgical abstracts,* p.702. ⅝ col. including another review.

"Written by a Carl Zeiss man and is nicely balanced as between theory and practice. Effort has been made to assist the student by collecting into an appendix a list of the symbols used and the optical relationships derived in the text, and there is an extensive bibliography. Particularly valuable are the pairs, and sometimes more extensive series, of photomicrographs if the same are taken under different conditions. Dark-field, phase-contrast, and polarized-light methods are considered, together with sources of illumination. In general, the theoretical aspects are dealt with in the first three-quarters of the book, the final quarter being devoted to views and descriptions of particular instruments or components, both optical and mechanical." *H. J. Axon.*

Oldfield, R. L.

Radio-television and basic electronics. Ed.2, revised. 400p. 1960. American Technical Soc., Chicago, $4.95.

Electronic technician, July 1960, p.66. ⅛ col.

"The second revised edition of a predecessor, 'Fundamentals of Radio.' The edition is a concise discussion of electrical principles, including Ohms law, magnetism; and other basic radio principles. Audio fidelity (monophonic and stereophonic systems), TV transmission, and reception principles, black and white TV problems are explained . . . The experienced TV and electronic technician may find this book too basic an addition to his electronic library, but the volume is adequate for the beginning electronic student."

Overman, Ralph T., & **Clark,** H. M.
Radioisotope techniques. 476p. 1960. McGraw, New York, $10.

Chemical products and chemical news, July 1960, p.328. ⅜ col.

"Although it is not apparent from the title this is essentially a laboratory textbook, and, furthermore, a most useful one . . . Each chapter contains an extensive discussion of the theory and principles behind the technique . . . Full references are given and so the book could be useful to anyone interested in acquiring a background knowledge of the subject . . . Must be commended to all concerned with laboratory teaching of Physical and Analytical Chemistry as well as Biology." *T. R. M.*

Nuclear physics, June 1960, p.340. ½ p.

"Should undoubtedly prove useful for many research workers in the field of applied radioactivity, for teachers who want to set up laboratory courses in radioisotope work, and for students who want to familiarize themselves with this subject . . . Gives simultaneously a description of the background material in elementary physics, mathematics and chemistry for radioactivity work and an excellent set of laboratory experiments appended to each chapter. Thus, the book is like an old-fashioned textbook for experimentalists, but dealing with a modern topic." *O. Kofoed-Hansen.*

Nucleonics, July 1960, p.102. 1⅛ col.

"The Oak Ridge course in radioisotope techniques, which has served to train several thousand medical and research scientists in the use of isotopes, has at last been published . . . by two of the people most active in its development . . . The authors have included more experiments than could be completed in a conventional semester course so that the instructor can have an opportunity to select on the basis of the interests of his students and in the light of the facilities he has available. These experiments have also been designed to keep reagent and equipment costs at the lowest level consistent with the experimental objectives." *J. F. Black.*

Parker, Harry E.
Simplified design of reinforced concrete. Ed.2. 303p. 1960 Wiley, New York, $6.50.

Concrete and constructional engineering, July 1960, p.288. ⅛ col.

"The previous edition . . . on reinforced concrete practice in the U.S.A. was published seventeen years ago. Therefore considerable revision has been necessary, and much new matter, such as a chapter on prestressed concrete, is included. A feature of the book is the numerous worked examples of design calculations which are in accordance with the latest American codes. The contents include a few pages on materials and making concrete, and several chapters on bending and shearing which are followed by sections dealing with the principles of the design of rectangular and flanged beams, floors, columns, foundations, retaining walls, and stairs . . . A good introductory text for those requiring a knowledge of the elements of reinforced concrete design as practised in America."

Parr, Norman Lawrence.
Zone refining and allied techniques. 184p. 1960. British Bk. Service, New York, $9.

Chemistry & industry, July 2, 1960, p.864. 1 col.

"The present literature on the subject [of zone refining] consists of one book, several reviews and original papers. This addition to the literature is directed particularly to the experimentalist. It surveys the technique and provides practical information on recent advances in the process and in related techniques . . . As most of the work on zone refining has been on its metallurgical applications, the book is concerned almost entirely with this aspect . . . Well produced and should form a very useful introduction to the subject not only to those in metallurgical and electronic laboratories but to all interested in pure materials." *J. F. Martin.*

Engineer, July 22, 1960, p.142. 1⅛ col.

"A welcome expansion of a monograph which the author wrote at the request of the Royal Institute of Chemistry in 1957 . . . Aims to survey the technique, to provide information about recent laboratory methods and equipment associated with zone refining, and to encourage a wider application of the process to other fields of research and industry. The subject is very new, so much of the more recent information is still in the hands of individual and sometimes unknown workers . . . Electronic engineers, metallurgists, and physicists will all be grateful to the author . . . for this valuable little book."

Nuclear engineering, June 1960, p.282. ⅜ col.

"The author . . . while not neglecting the theory of the process, has emphasized the practical side, including the design and description of equipment ranging from the simpler —almost 'lash-up'—demonstration rigs to quite complex apparatus for precision production work, and has also examined the allied subjects of the manipulation and examination of high-purity materials. In his final chapter, on the application of high-purity materials, future possibilities mentioned, such as fission product removal and improved ductility of beryllium, are of particular interest in the nuclear field." *J. A. B.-B.*

Partington, J. R.
History of Greek fire and gunpowder. 381p. 1960. Heffer, Cambridge, England, 70s.

Journal of the Royal Institute of Chemistry, June 1960, p.210. 1⅛ col.

"A complete and systematic marshalling of a vast body of evidence (and previous opinions) on each aspect of Greek fire, of gunpowder and of ballistic instruments. There are most entertaining illustrations from sources beautifully documented . . . A volume covering so vast a field and with so much respectful citation of earlier investigators has necessarily some loose ends, but these are mitigated by the fullness of the indexes. Every student of the subject will be grateful to Professor Partington for this splendid work." *Dorothea Waley Singer.*

Nature, July 23, 1960, p.272. 1⅛ col.

"Prof. Partington surveys the history of incendiaries and gunpowder in the same thorough way that characterized his well-known 'Origins and Development of Applied Chemistry'. He has taken great care to inspect the original sources of information, and he quotes them at length in the seven fully annotated chapters of this book, which has been completed by good indexes and twenty-one illustrations, some

of which are seldom reproduced . . . A handbook which not only the artillery expert and the chemist but also the historian of technology will consult with profit for many years to come." *R. J. Forbes.*

Pimentel, G. C., & **McClellan,** A. L.
Hydrogen bond. 475p. 1960. Freeman, San Francisco, $11.40.

Chemistry & industry, June 11, 1960, p.687. ⅘ col.

"Although the hydrogen bond has been dealt with before in articles, symposia, reviews and specialist chapters in chemical texts, this is the first attempt to tackle this rapidly expanding subject in single book form. Because the hydrogen bond affects physical rather than chemical behaviour, the authors have rightly emphasised the relation of physical properties to hydrogen-bond structure, and a great part . . . is devoted to the detection and assessment of hydrogen bonds by physical methods . . . A courageous and successful attempt to capture a quickly changing scene. It is at present up-to-date, and it will be most interesting to see how long it remains so." *L. Hunter.*

Journal of the American Chemical Society, Aug. 5, 1960, p.4120. ⅔ col.

"The volume of literature on this subject is considerable and is steadily increasing. This book represents a comprehensive and critical review of this mass of literature . . . Written with emphasis upon the physical and chemical facts with a threefold objective in mind: to compile and summarize the experimental facts . . . to present a critical discussion of the present state of the theory; and to present a bibliography (through 1956) which will aid workers in the field. In reading the book it appears that the authors have succeeded in reaching their goals . . . A welcome addition to the libraries of all scientists interested in hydrogen bonding." *Walter S. Koski.*

Rainville, Earl David.
Special functions. 365p. 1960. Macmillan, New York, $11.75.

Machine design, July 21, 1960, p.244, 246. 9 l.

"Special functions frequently encountered in engineering, physical, and chemical applications are emphasized. Functions of the hypergeometric type are thoroughly covered, and a comprehensive treatment of generating functions is presented. More than 50 special functions are discussed."

Ralston, Anthony, & **Wilf,** H. S., ed.
Mathematical methods for digital computers. 293p. 1960. Wiley, New York, $9.

Design news, June 20, 1960, p.124. ⅓ col.

"Numerical analysis, as commonly taught in colleges today, presents the student with powerful mathematical methods essential to digital machine computation, but fails to show him how these methods are applied in actual practice . . . In this book, the gulf is successfully bridged by a group of excellent papers . . . Each chapter is a detailed treatment of a particular numerical technique and its direct application to machine computation . . . Not a book for the novice, but should be a must for the library of any digital computer problem analyst."

Electronic industries, Aug. 1960, p.62. ⅓ col.

"Of value to anyone who is interested in or has contact with digital computers. For such a reader the book offers mathematical analysis and derivations of commonly used techniques of digital computation; and detailed, step-by-step discussion of the actual processing of complex mathematical and physical problems. Each chapter . . . has been contributed by a man in close contact with the latest developments in his field, and each deals with an important and representative mathematical problem."

Power engineering, Aug. 1960, p.113. ⅜ col.

"There are many books on computers and programming and also on the subject of numerical analysis. This book, however, offers a unified and integrated treatment of both subjects. In other words, it not only describes the mathematics that must be used in putting programs into digital computers, but it tells in much detail just how it is done."

Rausch, Bernard.
Evolution above the species level; translated from the German. 419p. 1959. Methuen, London, 63s.

Chemical products and chemical news, July 1960, p.327. ¾ col.

"Professor Rausch has attempted a survey and a critical synthesis of the whole field . . . All the special factors concerning transspecific evolution are critically examined—on a basis of comparative anatomy rather than genetics—and their validity assessed and interpreted in the light of the evolutionary mechanisms now known to science . . . This is a difficult, but rewarding and fascinating book, and indubitably a major contribution to, and clarification of our ideas on evolution." *S. O.*

Reeves, E. A., ed.
Uses of electricity in the oil industry. 296p. 1960. Benn, London, 50s. net.

Electrical journal, July 8, 1960, p.106. ⅔ col.

"This symposium . . . gives a comprehensive coverage of the many uses of electricity in the wide fields of operation embraced by the British oil industry. These range from exploration and production to refining and distribution and the application is a wide one embracing power engineering in respect of generation, transmission and utilisation, control system engineering and instrumentation, and telecommunications . . . Although primarily intended for electrical engineers in the oil industry it will prove of considerable interest to manufacturers supplying equipment to that industry and also to those concerned with associated industries where similar conditions may be experienced, as in mining and chemical processing."

Reimer, L.
Elekronenmikroskopische Untersuchungs-und Präparations-methoden. 300p. 1959. Springer, Berlin, DM 58.

British journal of applied physics, June 1960, p.239. ¾ col.

"Clearly written, well produced and illustrated with 135 line diagrams . . . Altogether the author has succeeded in his aim of providing a comprehensive survey of the subject in a text of convenient length. Inevitably

there is some uneveness of treatment where so wide a range of topics has to be covered; the alternative of collecting a group of experts to write each on his own subject . . . would in these days require a volume of twice the length for authoritative coverage. Such a massive 'Handbuch' may still come, but in the meantime the present work will prove invaluable to old hands and newcomers alike." *V. E. Cosslett.*

Reiner, Markus.

Deformation, strain, and flow; an elementary introduction to rheology. Ed.2. 347p. 1960. Lewis, H. K., London, 63s.

Journal of the Institute of Metals, June 1960, *metallurgical abstracts,* p.703. ⅝ col.

"The main changes are the re-arrangement of the subject matter, leading to a clearer presentation, and the higher quality of the reproduction of the book . . . Although the total number of pages . . . remains virtually unaltered, some of the old subject matter has been revised in accordance with the changing views of the author . . . Written at a fairly elementary level for a wide public and contains much useful information. In particular, the historical development of the subject is traced, a good bibliography and index being included. While reading this book, one cannot help being stimulated by the youthful zest and enthusiasm of the author for his subject." *J. M. Alexander.*

Rhodin, Thor N., ed.

Physical metallurgy of stress corrosion fracture. 394p. 1959. Interscience Publishers, New York, $13.

Research applied in industry, July 1960, p.285. ⅜ col.

"Stress corrosion is a fringe phenomenon in so far as it possesses both physical and chemical aspects each significant and essential to the problem as a whole. One of the purposes of the Conference on which this book is based was to bring together people who had studied on one hand the chemical and electrochemical part of the problem, and on the other the physical side dealing with the role of structural imperfections such as dislocations . . . The metallurgist will . . . find much of interest concerning the stress corrosion behaviour of numerous alloys and may learn of new hazards. However, from the long term view the new emphasis on the importance of both chemical and physical (or structural) aspects is very welcome, and it can be confidently predicted that much progress will be made in our understanding of this vexing problem in the next few years." *R. W. K. H.*

Rippel, Harry C.

Cast bronze bearing design manual. 72p. Cast Bronze Bearing Inst., Inc., 1604 Chicago Ave., Evanston, Ill., $2.

Machine design, July 21, 1960, p.246. ¼ col.

"Latest theoretical and experimental information on bronze bearing design is presented. Design techniques are simplified, and cumbersome trial-and-error methods have been eliminated. Some topics discussed are viscosity and lubricants, bearing bronze selection, grooving specifications, techniques for supplying lubricant, and bearing fabrication and assembly."

Roberts, Cornelius Sheldon.

Magnesium and its alloys. 230p. 1960. Wiley, New York, $9.

Aero/space engineering, June 1960, p.102. 11 l.

"A reference book for persons seeking either isolated facts or a general picture of the science and technology of magnesium . . . Not intended as a shop manual or as a handbook for the structural designer. The extraction, refining, and casting of the metal, as well as its chemical and physical properties, are considered in detail . . . Included [are] extensive lists of references, a bibliography, and a subject index."

Product engineering, July 4, 1960, p.63. ⅛ col.

"A concise up-to-date reference book on the over-all aspects of magnesium and its alloys. Unusual for a reference book, it avoids tiresome repetition of commercial literature and datings of historical events. Metallography of Mg (not significant in design) is also omitted. Because of its straightforward presentation, this book has a high percentage of useful information."

Roos, A.

Technique métallographique; préparation des surfaces métalliques pour micrographie et macrographie. 121p. 1960. Dunod, Paris, 13.50 fr.

Journal of the Institute of Metals, June 1960, *metallurgical abstracts,* p.702. ⅜ col. including another review.

"Essentially a practical handbook of a rather uncritical kind, in which are illustrated a wide range of commercially available machines, of continental origin, for the measurement of surface roughness, cutting off, grinding, mechanically polishing, electrolytically polishing, and mounting of specimens. Cold-setting mounting resins are not listed. There are short but useful lists of etching agents and a very brief general review of the probable surface structures of partially prepared specimens. All this is exactly what the author set out to do, and he has done it well." *H. J. Axon.*

Rumford, Frank.

Chemical engineering materials. Ed.2. 384p. 1960. Constable, London, 32s. 6d.

Chemical age, July 9, 1960, p.64. ⅜ col.

"Dr. Rumford's book properly stresses the order of desirable properties in materials of plant construction, despite what some critics may have said. He proceeds to show how, from a knowledge of the fundamentals of corrosion and an appreciation of the chemical and physical properties of specific materials, a reasoned choice of resistant construction may be made. The individual chapters on metallic alloys are excellent . . . The chapter on high polymers appears by comparison to be much less specific . . . Taken as a whole, however, one must congratulate Dr. Rumford on a valuable text which satisfies a very real need." *T. K. R.*

Chemistry & industry, June 4, 1960, p.654. ⅜ col.

"A second edition which has maintained the high standard of the first edition as a textbook for students . . . The main materials for construction are described and discussed . . . and they are dealt with in the logical order of

importance . . . Liberally and well illustrated and, where appropriate, microphotographs are shown . . . Considering the work as a whole, it is excellent for the purpose for which it was written, and represents sound value for money . . . One feels that the author could easily have increased the size of the book with advantage to the readers, by the inclusion of more distilled experience, but to do this might not have been within the scope permitted to him." *A. Webster.*

Industrial chemist, July 1960, p.365. ⅔ col.

"A book which can be used by students of chemical engineering as an introduction to a complicated subject. The value to students lies in the attempt the author has made to relate all his statements to experience in industrial use. This second edition adds to this value by placing in perspective the cost of the various materials when alternatives present themselves . . . Remains good value for money and its use among students deserves to be encouraged . . . Could also be used with advantage by many engineers in industry since it is entirely directed to British practice and British manufacturers." *F. E. Warner.*

Rybakov, B. V., & **Sidorov,** V. A.
Fast-neutron spectroscopy; translated from the Russian. 121p. 1960. Consultants Bureau, New York, $17.50.

Chemical & process engineering, June 1960, p.266. ⅝ col.

"Once one has recovered from the shock of the cost of this volume, one can feel little except enthusiasm for it. The translation is excellent, and has brought out clearly the masterful exposition by the authors of some fascinating features of Soviet research in a very important field . . . Based on work on what may be the finest existing spectrometer, while the time-of-flight methods here described refer largely to the authors' own experiments and results . . . A necessity for anyone working in, or interested in, this particular field of nuclear physics." *F. R. Paulsen.*

Nucleonics, Aug. 1960, p.112. 2 col.

"One of the pleasing aspects . . . is the fact that the authors have achieved a thorough and up-to-date review of fast-neutron spectroscopy while maintaining a balance between applications and analyses of the techniques described. Each chapter is well referenced for those who may wish to pursue further certain phases of the work . . . Should prove useful to those engaged in the fields of neutron spectroscopy and neutron physics as well as to students in advanced physics courses." *George J. Safford.*

Saxe, R. F.
Approaches to thermonuclear power. 65p. 1960. Temple Press, London, 12s. 6d.

Nuclear engineering, June 1960, p.282. ⅔ col.

"So much material, both popular and technical, has been written on the subject of thermonuclear power that it is difficult for those approaching the subject to pick their way between over-simplified (and occasionally over-optimistic) popular material, and fragmentary communications on some aspect of advanced plasma physics which they have not the background to appreciate. This book will provide that background." *N. E. T. S.*

Schwartz, Seymour, ed.
Selected semiconductor circuits handbook. 500p. 1960. Wiley, New York, $12.

Electrical design news, July 1960, p.51. ½ col.

"Gives complete circuit details of a wide variety of reliable semiconductor circuits, including a-c and d-c amplifiers for both power and high frequencies, oscillators, modulators and converters, switching circuits, power converters and circuits combining magnetic elements with transistors . . . Design engineers should find the handbook of great value. With the aid of the book, it is possible to design instruments or systems using the block diagram approach. Circuits for individual blocks are then picked out of the handbook . . . Most of the text originally appeared as a 'Handbook of Selected Semiconductor Circuits', published by the Navy's Bureau of Ships."

Sedov, L. I.
Similarity and dimensional methods in mechanics. 353p. 1960. Academic Press, New York, $14.

Journal of applied physics, July 1960, p.1307. ⅛ col.

"In this remarkable volume are brought together an impressive number (about 40) of more-or-less unrelated topics, ranging from the motion of a simple pendulum to shock wave decay and a theory of novae and supernovae. These diverse subjects, many of them falling within the broad realm of modern fluid mechanics, have in common that they can profitably be attacked by similarity techniques and/or dimensional considerations. Here the details of this attack are presented and then the mathematical solution is carried through to the presentation of graphical results and physical interpretation. The author is recognized as one of the great engineer-scientists of our times, and it is clear that he is a master of these powerful techniques and of applied mathematics in a very broad sense."

Seifert, William W., & **Steeg,** C. W., ed.
Control systems engineering. 964p. 1960. McGraw, New York, $15.

Missiles and rockets, July 4, 1960, p.6. ¼ col.

"A relatively complete coverage of the mathematical aspects of modern control systems engineering, as applied in the study of complex, large-scale automatic control systems . . . The first two chapters introduce the general subject of control-systems engineering. The remaining 15 chapters are devoted to a systematic development of the theoretical techniques used in the analysis and synthesis of control systems. A thorough coverage is included on modern control system theory from the trial-and-error procedures which are commonly used in the design of linear systems to the application of game theory in the synthesis of complex systems."

Slater, Noel B.
Theory of unimolecular reactions. 230p. 1960. Cornell Univ. Press, Ithaca, N. Y., $4.75.

Journal of the Royal Institute of Chemistry, July 1960, p.243. ⅝ col.

"[The author] gives a well ordered and

readable account of his own theoretical work and that of others on the theory of unimolecular reactions. Most of the theoretical work on this subject has been based on classical assumptions, but Dr Slater's book also goes briefly into the quantum mechanical extensions of the theory which have recently been put forward by him and other workers . . . Particularly useful, not only as an account of present theories, but also as indicating the problems which remain to be solved . . . A valuable contribution to the literature of chemical kinetics and is to be recommended to all serious students of physical chemistry." *H. C. Longuet-Higgins.*

Physics today, July 1960, p.42, 44. ½ col.

"In this short book based upon a series of lectures, N. B. Slater, has presented a detailed description of his own contributions to the field. Although there is some new material, the book is largely a collection and systematic presentation of work scattered rather widely through the current literature . . . Written in a charming personalized style all too often lacking in scientific treatises . . . Undoubtedly belongs on the bookshelves of all physical chemists — student and postgraduate." *Stuart A. Rice.*

Smales, A. A., & **Wager,** L. R., ed.
Methods in geochemistry. 464p. 1960. Interscience Publishers, New York, $13.50.

Mining magazine, July 1960, p.29. 1 col.

"This symposium of ten articles . . . by a dozen authors mainly from A.E.R.E. (Harwell) and Oxford University, sets out to describe various advanced methods of analytical research now employed in the study of the chemistry of the earth. The basic idea of the book is a good one, for many of these modern techniques are but little known to the generality of geologists and chemists . . . One or two of the papers would have benefited somewhat from closer proof-reading, but all are lucid and illuminating . . . Each chapter concludes with several pages of selected references and there is a good index." *C. F. Davidson.*

Stanley, Jay.
Electronics for the beginner. 192p. 1960. Sams, Indianapolis, $3.95.

Electrical South, June 1960, p.134. ⅓ col.

"The author introduces the beginner to the fundamentals of constructing electronic devices. Each project is increasingly difficult, so the neophyte also picks up a liberal dose of electronic theory along the way. Projects include: a 'one-hour' radio; one-transistor headphone amplifier; speaker amplifier; pocket radios . . . and several others. All equipment is completely transistorized—a unique feature in books of this kind. Other chapters . . . deal with tools and the gentle art of soldering, electronic parts and symbols, reading circuits, etc."

Steeds, W.
Mechanics of road vehicles. 287p. 1960. Iliffe, London, 35s.

Automobile engineer, July 1960, p.298. ⅝ col.

"Although a number of books have been published on the principles of engine design, we cannot think of any earlier work representing an attempt to deal adequately with the application of the principles of mechanics to the other sectors of vehicle design and operation. The volume under review, therefore, is most useful and is bound to become accepted as a standard textbook. Many of the subjects that it covers have never before appeared in a book, although they have been dealt with from time to time in technical journals and published papers . . . Should prove to be most helpful to draughtsmen and junior designers of road vehicles, [although] there is also much in it that will be of interest to established engineers."

Engineering, July 15, 1960, p.95. ⅝ col.

"A useful addition to the subject of automobile engineering since its assembles in a comprehensive manner the basic technical information relating to the mechanics of road vehicles, with the exception of the engine. The author explains the reason for this omission on the grounds that a number of excellent books are already available on the subject . . . In treating a subject of this magnitude in so conveniently concise a book, it is impossible for the author to go into great detail on all the subjects, but the whole field of road vehicle mechanics is sufficiently covered . . . Will be invaluable to draughtsmen and engineers engaged in this branch of engineering." *R. R. Bishop.*

Steeg, C. W. See **Seifert,** William W., & **Steeg,** C. W., ed.

Strughold, H. See **Benson,** Otis O., jr., & **Strughold,** H., ed.

Swinnerton, H. H.
Fossils. 274p. 1960. Collins, London, 30s. net. (New naturalist series.)

Nature, July 23, 1960, p.271. 1 col.

"An unqualified welcome cannot be given to this book which at first sight seems so well to fill an obvious gap in the New Naturalist series. It is not that the vividness of the reconstructions of the geological past is often obtained by the presentation of detail the conjectural nature of which is not made sufficiently apparent. Nor . . . does it matter much that a number of names used are out of date, as are also some of the ideas . . . The pity is that there are a number of confusions of matters of some importance . . . Finally, it is necessary to say that there are far too many misprints." *S. Simpson.*

New scientist, July 7, 1960, p.49. 1⅛ col.

"The author has been badly served, mainly by his proof reader, and one wonders if, in fact, the proofs were read at all . . . One notices sadly the omission of much that has happened in the last twenty years, and this outdateness is confirmed by the bibliography . . . One can only hope that the number of . . . readers will be sufficient to enable the publishers very shortly to produce a new and revised edition that will do justice to the author and validate their claims for the present edition." *W. E. Swinton.*

Tudbury, Chester A.
Basics of induction heating. 2v. 284p. 1960. John F. Rider, New York, $7.80 unbound.

Electronic technician, July 1960, p.66. ⅝ col.

"This down-to-earth presentation of the principles and applications of the induction heating art fills a long-standing void. Volume 1 presents the principles of induction heating equipment, including how it works, efficiency factors, types of workpieces, heating coils, and basics of heat flows . . . [In Volume 2] induction heating equipment is analyzed from a practical viewpoint . . . The 'picture-text' demonstrates how an otherwise complicated subject can be simplified. Persons who can profit from these volumes run the gamut — student to operating and maintaining personnel to graduate engineer. If you're the least interested in induction heating equipment, don't miss this."

Tyner, Mack.

Process engineering calculations; material and energy balances. 403p. 1960. Ronald, New York, $8.50.

Chemical engineering, July 25, 1960, p.174. 1 col.

"Unique features of this well planned book distinguish it from others devoted to the techniques and principles of making material and energy balances . . . Logically organized and clearly presented, but the outstanding difference from other texts on calculations is the emphasis on application . . . [The text] has one objectionable characteristic: while comprehension of the over-all problem is desirable, the average beginning student may tend to lose sight of the fundamentals when they are mixed in with the description of the problem. The author minimizes this by good organization . . . All students who completely master this book will be well prepared for subsequent courses." *Bernard S. Pressburg.*

Umowski, Joseph S.

Ferrous metallurgy laboratory manual. 83p. 1960. American Technical Soc., Chicago, $2.25 unbound.

Iron and steel engineer, June 1960, p.236. ⅛ col.

"Contains background information, general theory, and explanations of a step-by-step presentation of laboratory experiments, together with glossary for handy reference to terms commonly used in metallurgy . . . Intended primarily to supply more than textbook information on the heat treatment of steels, it provides training material, and helps serve technical personnel with little or no investigative experience in a laboratory."

Vassy, Étienne.

Physique de l'atmosphère. v.2: Phénomènes de réfraction. 227p. 1959. Gauthier-Villars, Paris, $6.53.

Journal of the Optical Society of America, June 1960, p.629. ⅜ col.

"Professor Vassy's treatment is logical. The theory of the particular refraction phenomenon is described first. Then experimental results and observations are presented and connected with the theory. Finally, applications are discussed; these may be of a practical nature, or may serve as tools for further study of physical phenomena taking place in the upper atmosphere . . . The French is clear and concise, and the explanations are logical and easy to follow. Only a bibliography and index are lacking to making . . . the two volumes useful also as reference books, for they bring together material that can otherwise be found only in many different places and in original papers." *Richard Tousey.*

Vavra, M. H.

Aero-thermodynamics and flow in turbomachines. 609p. 1960. Wiley, New York, $14.50.

Missiles and rockets, July 4, 1960, p.6. ⅛ col.

"This text will probably become a standard in the library of every engineer designing turbomachines . . . Built upon the classical principle of thoroughly developing the theory—here, the flow relations—and then applying the results to the design of practical machinery . . . For mathematically oriented engineers who prefer making their errors on paper to making them in hardware. For those students who may have forgotten some of their mathematics, an extensive appendix gives a review of vector analysis, and an introduction to operations involving dyadics."

Vines, A. E., & **Rees,** N.

Plant and animal biology. 2v. 2112p. 1960. Pitman, London, 100s.

New scientist, June 2, 1960, p.1429. 1⅛ col.

"The text and the illustrations of these books are a remarkable achievement and deserve serious study by all those who teach biology at sixth form or first year university level. The authors have evident gifts of clarity and of simplification, and they do not shrink from attempting to explain the more abstract studies in biology in simple terms . . . The authors have made a courageous attempt to present recent research in a simple form, and it is not surprising that by so doing they may at times have presented an inaccurate picture . . . Criticism of detail however should not obscure the fact that these volumes make a very noteworthy contribution to the teaching of elementary biology." *Francis Knowles.*

Wager, L. R. See **Smales,** A. A., & **Wager,** L. R., ed.

Wait, James R., ed.

Overvoltage research and geophysical applications. 158p. 1959. Pergamon, New York, $9.

Journal of the Institute of Petroleum, June 1960, p.136 A. 1 col.

"This monograph . . . helps fill a gap in the lack of published data on this subject. The collection is edited by J. R. Wait, who has had considerable experience in this field of work and is in fact a recognized authority on it. Each of the papers deals with a particular aspect of the subject, the whole covering theoretical and experimental research work carried out over the 12-year period 1946-58 . . . Intended primarily for the exploration mining geophysicist, but recent interest in the subject appears to be spreading to possible oil exploration applications . . . Quite costly, but the standard and quality of the subject matter make it extremely good value." *P. T.*

Welsh, J. A. See **Kaye,** Joseph, & **Welsh,** J. A., ed.

Westwood, W., & **Mayer,** A.
Chemical analysis of cast iron and foundry materials. Revised edition by W. E. Clarke and H. Green. 586p. 1960. Allen, G., London, 65s. net.

Foundry trade journal, June 30, 1960, p.834. 1 col.

"The fundamental value of this excellent and authoritative treatise lies in its detailed instruction in analytical method and practice . . . Will undoubtedly be of invaluable assistance to any metallurgical chemist engaged in the practical analysis of cast iron and related materials. This revised edition is to be strongly recommended to all as probably the most up-to-date work of its kind in the particular field for which it is intended and there is little doubt that it will meet with similar, if not greater success than was gained by its predecessor over the past nine years." *S. Cross.*

Whyte, R. O.
Crop production and environment. Ed.2, revised. 392p. 1960. Faber, London, 63s.

New scientist, July 21, 1960, p.246. ¾ col.

"Well illustrated, contains about 650 references, and is remarkably up to date considering the wide field that is covered. Almost four hundred of the references are to papers and reviews published between 1955 and 1959. It is to be hoped that the book will be widely read by students of agriculture, experimental officers and research workers in crop husbandry, and by others concerned with increasing the production of food. They will not find answers to all the present pressing questions but they will at least find a summary of present knowledge and some shrewd definitions of the nature of these questions. The author cannot be blamed if they have not yet all been solved." *J. P. Hudson.*

Wiech, Raymond E., jr., & **Strauss,** R. F.
Fundamentals of rocket propulsion. 130p. 1960. Reinhold, New York, $5.50.

Missiles and rockets, July 4, 1960, p.6. ⅛ col.

"An all-inclusive review of the rocket engine —its history, fundamentals of operation, design of components and methods of applications. Chapters advance one step at a time through the basic laws governing rocket engine design; the design and operation of current engines; the need for and probable design of future engines; and the rocket engine's job in space flight and satellite missions . . . Fully describes all rocket engine types so that the function and operation of each is understood clearly."

Wilf, H. S. See **Ralston,** Anthony, & **Wilf,** H. S., ed.

Wilkinson, William Lionel.
Non-Newtonian fluids. 138p. 1960. Pergamon, New York, $6.50.

Chemical products and chemical news, June 1960, p.277. ¼ col.

"The various types of non-Newtonian fluid are considered in the opening chapters . . . and typical examples are provided. There is also a discussion of the principles of the experimental techniques which are normally used to characterise these fluids, together with details of methods and apparatus. The fundamental principles underlying the design and operation of equipment in which non-Newtonian fluids are to be processed are dealt with in some detail." *R. E.*

Zenz, Frederick A., & **Othmer,** D. F.
Fluidization and fluid-particle systems. 513p. 1960. Reinhold, New York, $15.

Canadian chemical processing, July 1960, p.76. ⅝ col.

"Fills the need for a comprehensive, organized coverage of modern developments in fluid-solids processing, particularly the moving-bed techniques, fluidization, and transport reactors . . . Gives a broad coverage of nearly every major aspect of fluid-particle technology. While no single item is covered in minute detail, the coverage devoted to any one field is sufficient for the practicing engineer to compute an answer to his problem, be made aware of recognized experimental or theoretical bases, and be referred, if necessary, to sources of a more detailed nature."

Journal of petroleum technology, June 1960, p.66. ½ col.

"The result of over 17 years of research and study, this book provides a convenient, centralized information source on all major aspects of fluid-particle technology . . . The information contained in the book should aid the practicing engineer by familiarizing him with recognized experimental or theoretical bases. For the research engineer, descriptions of pertinent phenomena in related fields are plentiful."

Ziman, J. M.
Electrons and phonons; the theory of transport phenomena in solids. 554p. 1960. Oxford, New York, $13.45.

New scientist, June 2, 1960, p.1429. 1½ col.

"As with much of solid state physics, a semi-empirical theory is available which gives a good account of the observations, although validity of certain basic assumptions and subsequent approximations remains in doubt. This book gives a lucid exposition of this theory. It is certain to become a standard textbook in the field and as such will receive an enthusiastic welcome from those who do research into the theory of the solid state. Although the bare outlines of the theory are to be found in older books written at a time when the whole of the theory of solids could be received in one volume, this is the first time that a comprehensive account of the theory has been available." *R. J. Elliott.*

Proceedings of the IRE, Aug. 1960, p.1508. 1 col.

"Graduate students and others interested in gaining a rather deeper view of solid state physics will welcome this book. From a pedagogical standpoint, it is one of the clearest and most literate textbooks on the subject that has yet appeared . . . It is . . . to be regretted that several important theoretical advances of the last five years are essentially neglected. There is an all too brief mention of galvanomagnetic effects in high fields, and quantum mechanical transport theory in general. Also, the theory of superconductivity . . . is completely omitted." *H. Ehrenreich.*